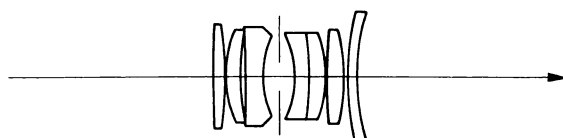


MINOLTA AF 50mm F2.8 MACRO (2564-100)

MINOLTA MAXXUM AF 50mm F2.8 MACRO (2564-600)

LENS



Construction : 7 elements in 6 groups
Type : Modified-Gauss type
Coating : Minolta Achromatic
Angle of view : 47°
Lens mount : Minolta A mount
Lens signal contact : 5 contacts
Diaphragm : Automatic preset diaphragm
f No. : Maximum···2.8
Minimum···32
Full-stop setting···7 stops
Diaphragm blade : 7 blades



DIMENSIONS & WEIGHT

Dimensions : $\phi 68.5$ (max. diameter) \times
59.5 mm (max. length)
Weight : 310 g
Filter-thread diameter : $\phi 55$ mm (P=0.75)

FOCUSING

Focusing : AF, FA, M
Type : Double-floating focusing
Minimum focusing distance : 0.2 m

Distance scale :

7.9 in	8.1 in	8.4 in	9 in	10 in	1	1.25	1.75	6	∞	(ft)			
0.2	0.201	0.203	0.206	0.21	0.22	0.23	0.25	0.27	0.3	0.4	0.6	2	(m)

Infrared correction index : Yes

Depth-of-field scale : 16 22

ACCESSORIES

Lens case (LH-1012)

I N D E X

Part No.	Page	Part No.	Page	Part No.	Page
2564-0031-----	4	2564-1230-----	1	2564-1367-----	3
2564-0040-----	4	2564-1231-----	3	2564-1368-----	3
2564-0045-----	4	2564-1232-----	3	2564-1369-----	3
2564-0113-----	3	2564-1233-----	2	2550-1374-----	1
2564-0240-----	1	2564-1235-----	1	2564-1375-----	1
2564-0245-----	3	2564-1236-----	2	2564-1377-----	3
2557-0371-----	3	2564-1241-----	1	2564-1378-----	3
2564-0372-----	1	2564-1242-----	1	2564-1382-----	3
2564-0379-----	2	2564-1244-----	3	2564-1383-----	3
2564-0381-----	2	2564-1246-----	3	2564-1385-----	2
2564-0384-----	3	2564-1247-----	3	2564-1386-----	2
2564-0430-----	1			2564-1387-----	3
2564-0432-----	2	2564-1361-----	1	2564-1388-----	3
		2564-1362-----	1	2564-1389-----	3
2564-1102-----	4	2564-1363-----	1	2564-1390-----	2
2564-1110-----	3	2564-1364-----	1		
2564-1112-----	3	2564-1365-----	1	2564-1402-----	1
		2564-1366-----	3	2564-1409-----	3

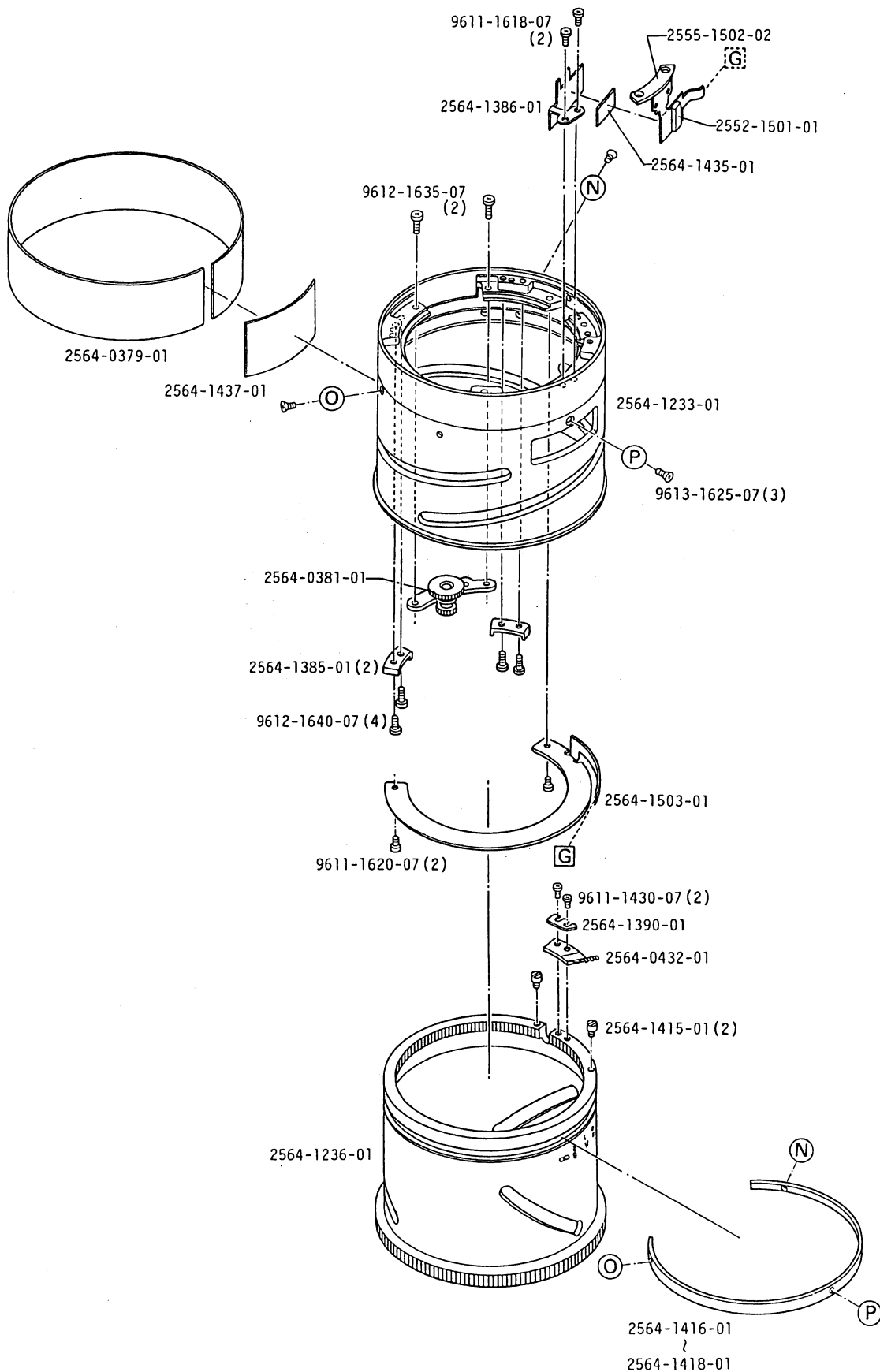
I N D E X

Part No.	Page	Part No.	Page	Part No.	Page
2564-1415-----2		2564-1454-----1,3		9611-1616-07-----3	
2564-1416-----2		2564-1455-----1,3		9611-1618-07-----2,3	
2564-1417-----2		2564-1456-----1,3		9611-1620-07-----2	
2564-1418-----2		2564-1457-----1,3		9611-1630-07-----3	
2564-1420-----1		2564-1458-----1,3		9611-1640-07-----1	
2564-1421-----3		2564-1459-----1,3		9611-2055-04-----1	
2564-1422-----3					
2564-1423-----3		2552-1501-----2		9612-1620-07-----3	
2550-1424-----1		2555-1502-----2		9612-1628-07-----1	
2564-1431-----1		2564-1503-----2		9612-1635-07-----2	
2564-1435-----2				9612-1640-07-----2	
2564-1437-----2		2564-1630-----1			
2550-1444-----1				9613-1620-07-----1	
2550-1446-----1		2564-1801-----4		9613-1625-07-----2	
2564-1450-----1,3					
2564-1451-----1,3		Screw		9763-1740-07-----1	
2564-1452-----1,3		9611-1422-07-----1			
2564-1453-----1,3		9611-1430-07-----2			

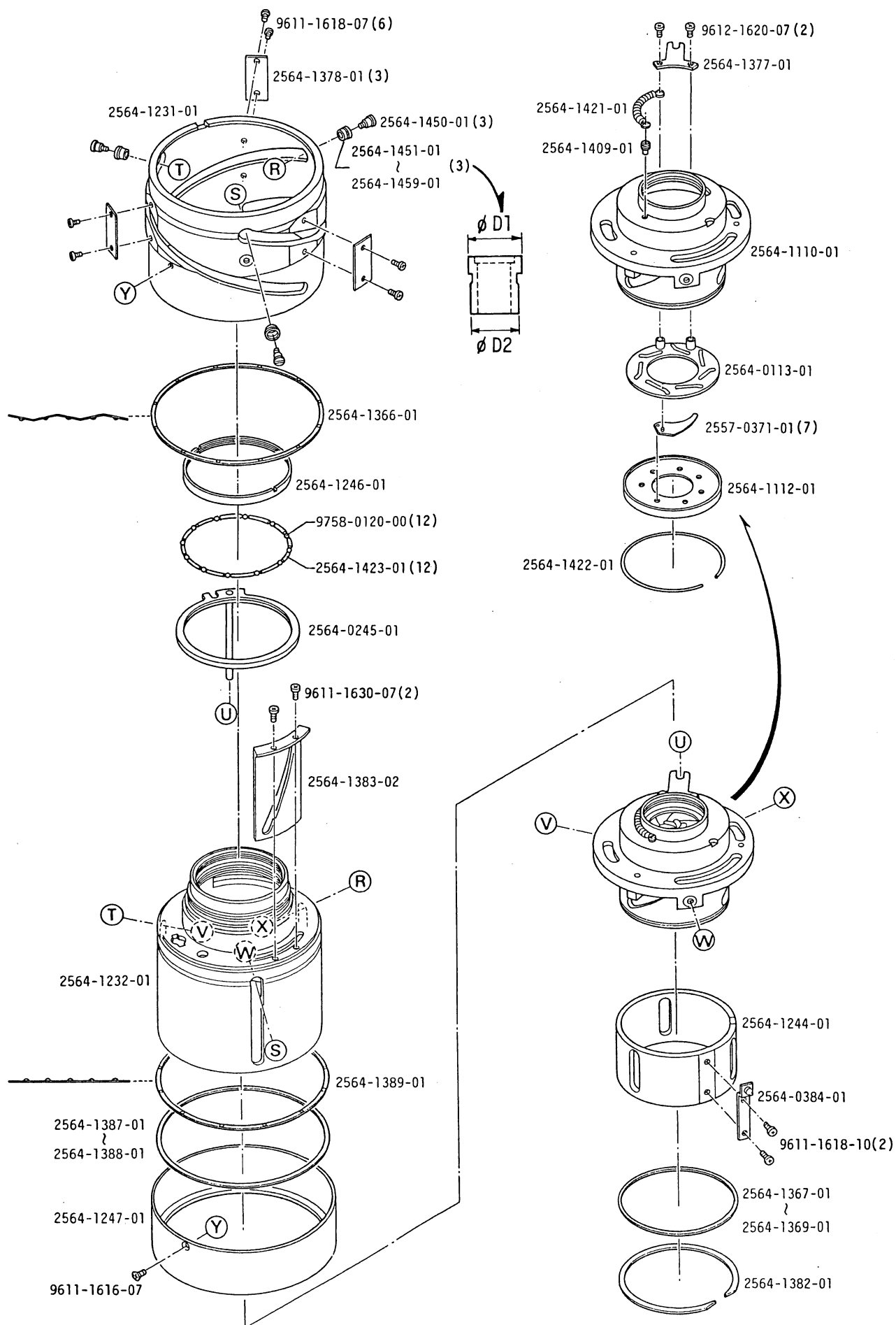
I N D E X

Part No.	Page	Part No.	Page	Part No.	Page
Washer					
9793-1733-50-----	1				
9790-1644-40-----	1				
9791-1644-40-----	1				
9792-1644-40-----	1				
9795-1644-40-----	1				
9799-1644-40-----	1				
Steel ball					
9758-0120-00-----	3				
E-ring					
9721-0200-13-----	1				

Part No.	Part Name		Qty.
2564-0240-01	Bayonet mount set	バヨネットマウントセット	1
(2550-1446-01)	Screw	ストップバービス	1
2564-0372-01	Preset ring set	プリセットリングセット	1
2564-0430-01	Distance scale window set	距離表示窓セット	1
2564-1230-02	Outer ring (-100)	固定保持環	1
2564-1235-01	Filter ring	鏡頭環	1
2564-1241-01	Front light shield ring	前遮光筒	1
2564-1242-01	Rear light shield ring	後遮光筒	1
2564-1361-01	Back washer - A (t=0.05)	バックワッシャーA	} Some
2564-1362-01	Back washer - B (t=0.07)	バックワッシャーB	
2564-1363-01	Back washer - C (t=0.1)	バックワッシャーC	
2564-1364-01	Back washer - D (t=0.2)	バックワッシャーD	
2564-1365-01	Back washer - E (t=0.5)	バックワッシャーE	
2550-1374-01	Preset ring pressure	プリセットリング押え	1
2564-1375-01	Key	直進キー	2
2564-1402-01	Coupler	カプラー	1
2564-1420-02	Main spring	メインスプリング	1
2550-1424-01	Spring	アーススプリング	1
2564-1431-01	Leather	貼皮	1
2550-1444-01	Bayonet point	バヨネット標点	1
2564-1450-01	Guide pin	案内ピン	6
2564-1451-01	Guide roller - A (D1= ϕ 4.53,D2= ϕ 4.03)	案内ローラーA	} 6
2564-1452-01	Guide roller - B (D1= ϕ 4.53,D2= ϕ 4.02)	案内ローラーB	
2564-1453-01	Guide roller - C (D1= ϕ 4.53,D2= ϕ 4.01)	案内ローラーC	
2564-1454-01	Guide roller - D (D1= ϕ 4.52,D2= ϕ 4.03)	案内ローラーD	
2564-1455-01	Guide roller - E (D1= ϕ 4.52,D2= ϕ 4.02)	案内ローラーE	
2564-1456-01	Guide roller - F (D1= ϕ 4.52,D2= ϕ 4.01)	案内ローラーF	
2564-1457-01	Guide roller - G (D1= ϕ 4.51,D2= ϕ 4.03)	案内ローラーG	
2564-1458-01	Guide roller - H (D1= ϕ 4.51,D2= ϕ 4.02)	案内ローラーH	
2564-1459-01	Guide roller - I (D1= ϕ 4.51,D2= ϕ 4.01)	案内ローラーI	
2564-1630-01	Outer ring (-600)	固定保持環	1
9611-1422-07	Phillips type screw	十字穴付なべ頭小ねじ	3
9611-1640-07	Phillips type screw	十字穴付なべ頭小ねじ	3
9611-2055-04	Phillips type screw	十字穴付なべ頭小ねじ	4
9612-1628-07	Phillips type screw	十字穴付なべ頭小ねじ	6
9613-1620-07	Phillips type screw	十字穴付半丸頭小ねじ	3
9763-1740-07	Tap tite screw	十字穴付半丸頭タップ タイトねじ	2
9721-0200-13	E - ring	E リング	1
9793-1733-50	Washer	薄ワッシャー	} Some
9790-1644-40	Washer	薄ワッシャー	
9791-1644-40	Washer	薄ワッシャー	
9792-1644-40	Washer	薄ワッシャー	
9795-1644-40	Washer	薄ワッシャー	
9799-1644-40	Washer	薄ワッシャー	



Part No.	Part Name		Qty.
2564-0379-01	Plate set	補強板セット	1
2564-0381-01	Gear set	ギヤーセット	1
2564-0432-01	Brush set	ブラシセット	1
2564-1233-01	Outer barrel	外筒	1
2564-1236-01	Focusing ring	距離リング	1
2564-1385-01	Focus stopper	フォーカスストッパー	2
2564-1386-01	Plate	受け板	1
2564-1390-01	Brush pressure plate	ブラシ押え板	1
2564-1415-01	Focusing stopper	フォーカスストッパーピン	2
2564-1416-01	Focus guide - A (H=2.98,L=1.49)	フォーカスガイドA	} 1
2564-1417-01	Focus guide - B (H=2.95,L=1.475)	フォーカスガイドB	
2564-1418-01	Focus guide - C (H=2.92,L=1.46)	フォーカスガイドC	
2564-1435-01	Tape-B	テープB	1
2564-1437-01	Tape	補強テープ	1
2552-1501-01	IC (TOSHIBA,ML00C)	IC	1
2555-1502-02	Lens contact board	信号基板	1
2564-1503-01	Flexible PC board	フレキ	1
9611-1430-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9611-1618-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9611-1620-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9612-1635-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9612-1640-07	Phillips type screw	十字穴付なべ頭小ねじ	4
9613-1625-07	Phillips type screw	十字穴付半丸頭小ねじ	3



Part No.	Part Name		Qty.
2564-0113-01	Diaphragm operation plate set	絞り操作板セット	1
2564-0245-01	Diaphragm connecting ring set	絞り連動リングセット	1
2557-0371-01	Diaphragm blade set	絞り羽根セット	7
2564-0384-01	Cam barrel connecting plate set	カム環連動板セット	1
2564-1110-01	Inner barrel	内筒	1
2564-1112-01	Diaphragm pressure plate	絞り押え環	1
2564-1231-01	2nd. cam barrel	第2群カム環	1
2564-1232-01	Middle barrel	中筒	1
2564-1244-01	1st. cam barrel	第1群カム環	1
2564-1246-01	Pressure ring	絞り連動リング押え	1
2564-1247-01	Middle barrel stopper ring	中筒抜け止めリング	1
2564-1366-01	Adjusting washer	トルク調整ワッシャー	1
2564-1367-01	Washer - A (t=0.05)	カム環調整ワッシャーA	} Some
2564-1368-01	Washer - B (t=0.07)	カム環調整ワッシャーB	
2564-1369-01	Washer - C (t=0.1)	カム環調整ワッシャーC	
2564-1377-01	Diaphragm connecting fork	絞り連動フォーク	1
2564-1378-01	Plate	補強板	3
2564-1382-01	Cam barrel set ring	カム環抜け止めリング	1
2564-1383-02	Cam plate	カム板	1
2564-1387-01	Spacer - A (t=0.05)	間隔ワッシャーA	} Some
2564-1388-01	Spacer - B (t=0.07)	間隔ワッシャーB	
2564-1389-01	Spacer - C	間隔ワッシャーC	
2564-1409-01	Pin	ピン	1
2564-1421-01	Sub spring	サブスプリング	1
2564-1422-01	Diaphragm pressure ring spring	絞り押え環スプリング	1
2564-1423-01	Spacer	スペーサー	12
2564-1450-01	Guide pin	案内ピン	3
2564-1451-01	Guide roller - A (D1= φ4.53,D2= φ4.03)	案内ローラーA	} 3
2564-1452-01	Guide roller - B (D1= φ4.53,D2= φ4.02)	案内ローラーB	
2564-1453-01	Guide roller - C (D1= φ4.53,D2= φ4.01)	案内ローラーC	
2564-1454-01	Guide roller - D (D1= φ4.52,D2= φ4.03)	案内ローラーD	
2564-1455-01	Guide roller - E (D1= φ4.52,D2= φ4.02)	案内ローラーE	
2564-1456-01	Guide roller - F (D1= φ4.52,D2= φ4.01)	案内ローラーF	
2564-1457-01	Guide roller - G (D1= φ4.51,D2= φ4.03)	案内ローラーG	
2564-1458-01	Guide roller - H (D1= φ4.51,D2= φ4.02)	案内ローラーH	
2564-1459-01	Guide roller - I (D1= φ4.51,D2= φ4.01)	案内ローラーI	
9611-1616-07	Phillips type screw	十字穴付なべ頭小ねじ	1
9611-1618-07	Phillips type screw	十字穴付なべ頭小ねじ	8
9612-1620-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9611-1630-07	Phillips type screw	十字穴付半丸頭小ねじ	2
9758-0120-00	Steel ball	スチールボール	12

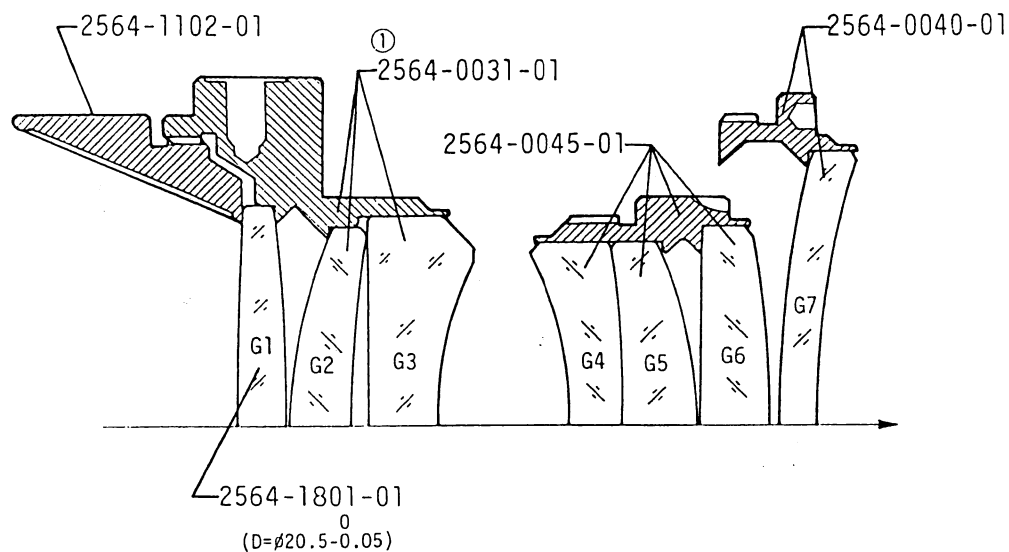
AF 50mm F2.8(32) MACRO Code No.2564-100
 MAXXUM AF 50mm F2.8(32) MACRO Code No.2564-600

■ When repairing following parts, must be checked resolving power by projection.

■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

①: The influential lens element in the lens performance. (Number shows in order.)

①: レンズ性能によく影響するレンズ。(数字は順位を示す)



Part No.	Part Name		Qty.
2564-0031-01	1st. lens barrel set	第1群玉枠セット	1
2564-0040-01	Rear lens set	後玉セット	1
2564-0045-01	2nd. lens barrel set	第2群玉枠セット	1
2564-1102-01	G1 pressure	G1押え	1
2564-1801-01	Lens - G1	レンズG1	1

REPAIR GUIDE

■ The contents of this manual are in accordance with the assembling procedure. Therefore, follow the reverse procedure when disassembling.

— Description of marks used —

- **[B]** : Adhesive
- **[S]** : Solvent
- **[A]** : Anti-diffusion compound
- **[G]** : Lubricant
- **[T]** : Tool
- : Point of assembling and general caution

■ Assembling and adjusting procedure

	Page
① Middle barrel, Cam plate, Diaphragm connecting ring, 2nd cam barrel assembling	1
② Diaphragm blade, Inner barrel, 2nd lens barrel set, Rear lens set, 1st cam barrel assembling	2
③ Outer barrel, Flexible PC board, Gear set, Brush, Focusing ring assembling	3
■ 1st cam barrel removing	4
■ Flexible PC board arranging	4
④ Key, Outer ring, Coupler, Bayonet mount, Rear light shield ring, Lens contact board assembling	5
■ Aperture diameter adjusting (including pre-check)	5
⑤ Front lens group set, Filter ring, Front light shield ring assembling	6
■ Flange back adjusting	6
■ Projection resolving power checking	6
■ Aperture diameter checking	6
■ General function checking	6
■ Flange back adjusting procedure	7
■ Description of focusing	8
■ Wiring schematic diagram and printed wiring diagram	9

■ Precautions

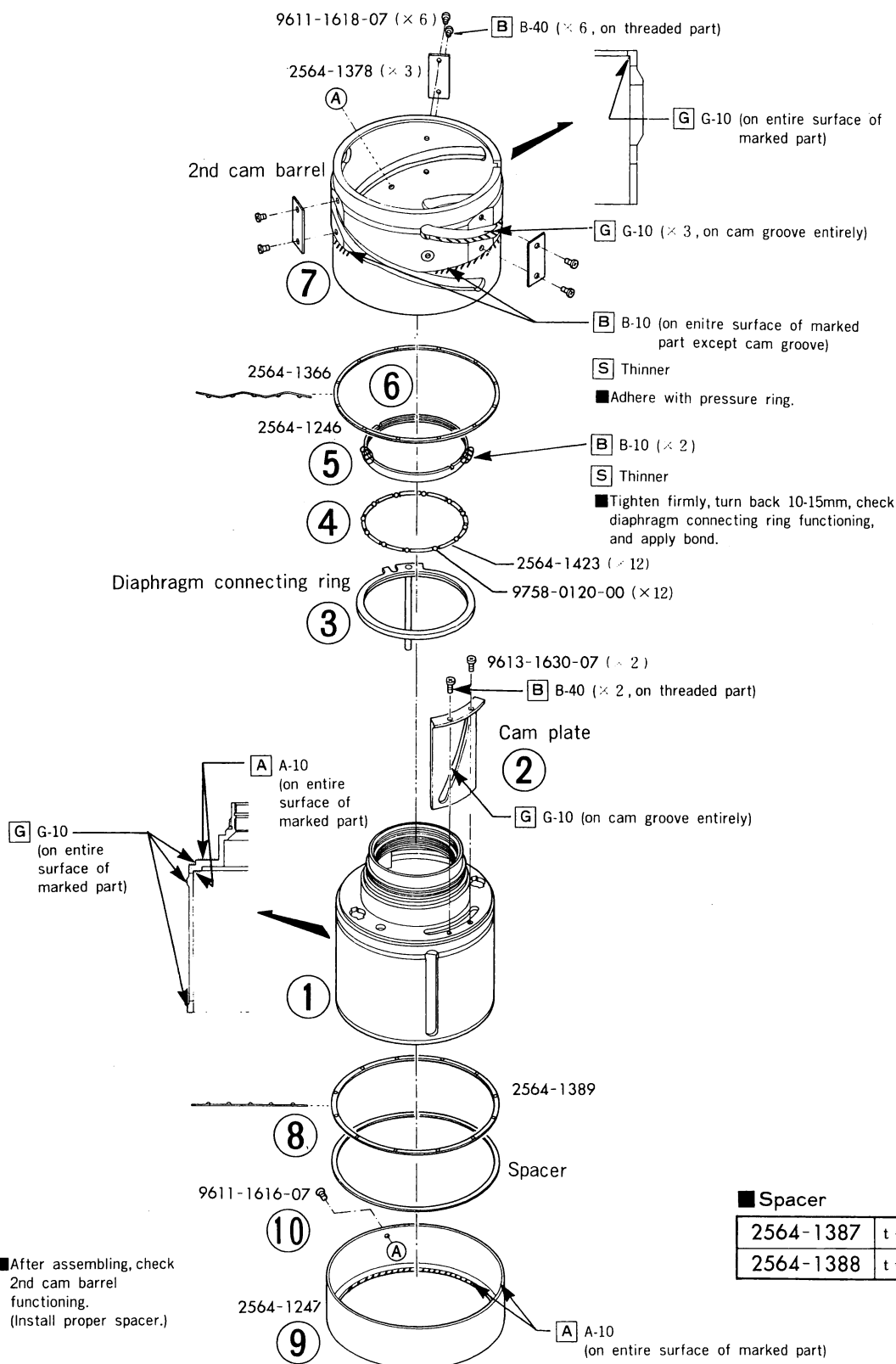
- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
 - Use Flonsolve or alcohol when cleaning. Never use the thinner, ketone or ether.
- Since MOS-IC is used in this lens, it is necessary to take special precautions about static electricity. When performing repairs, use the conductive mat without fail, as shown.



1 Middle barrel, Cam plate, Diaphragm connecting ring, 2nd cam barrel

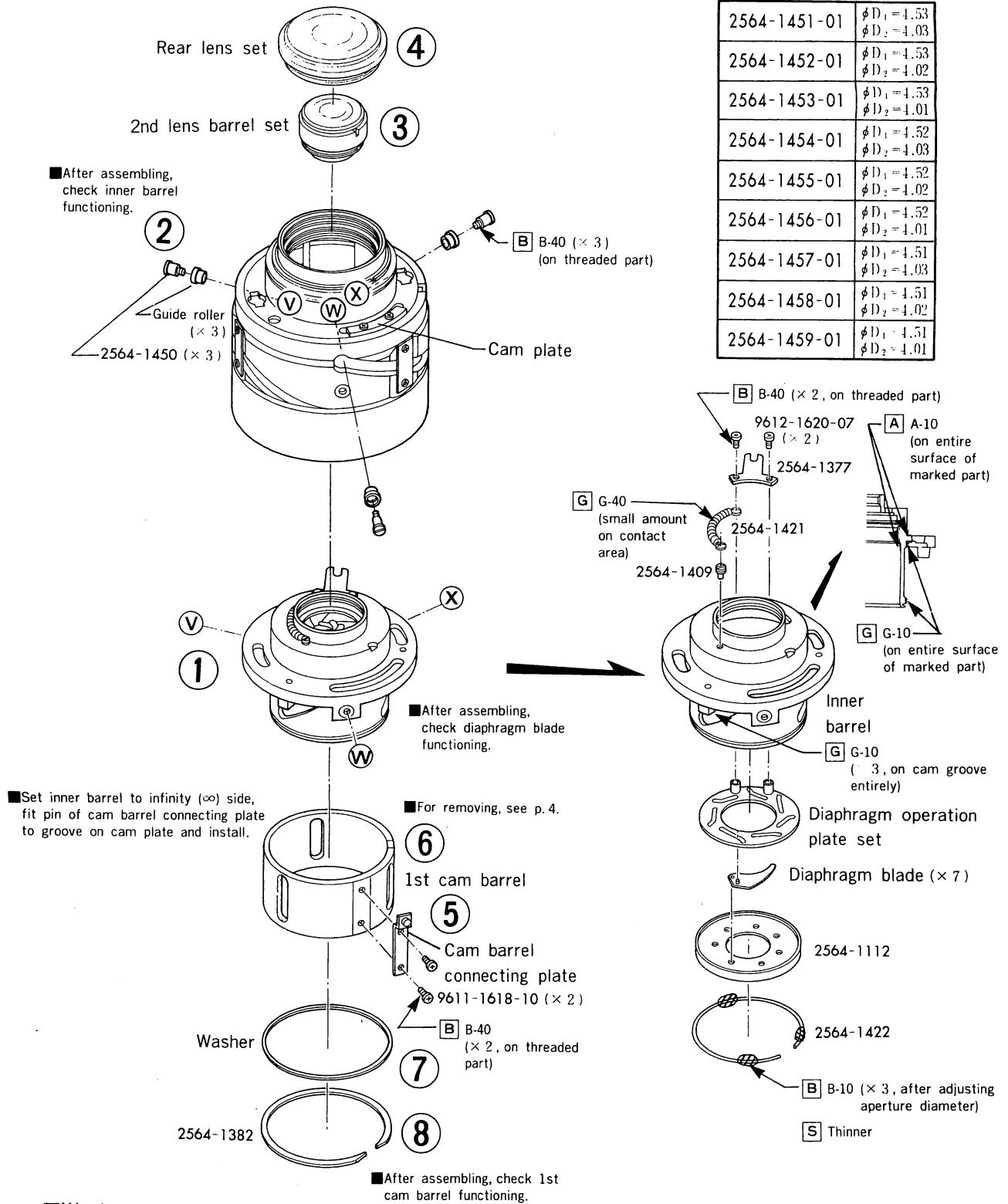
■ Assemble the parts in the order of ①-⑩.

■ Do not disassemble the parts ③-⑤, unless necessary.



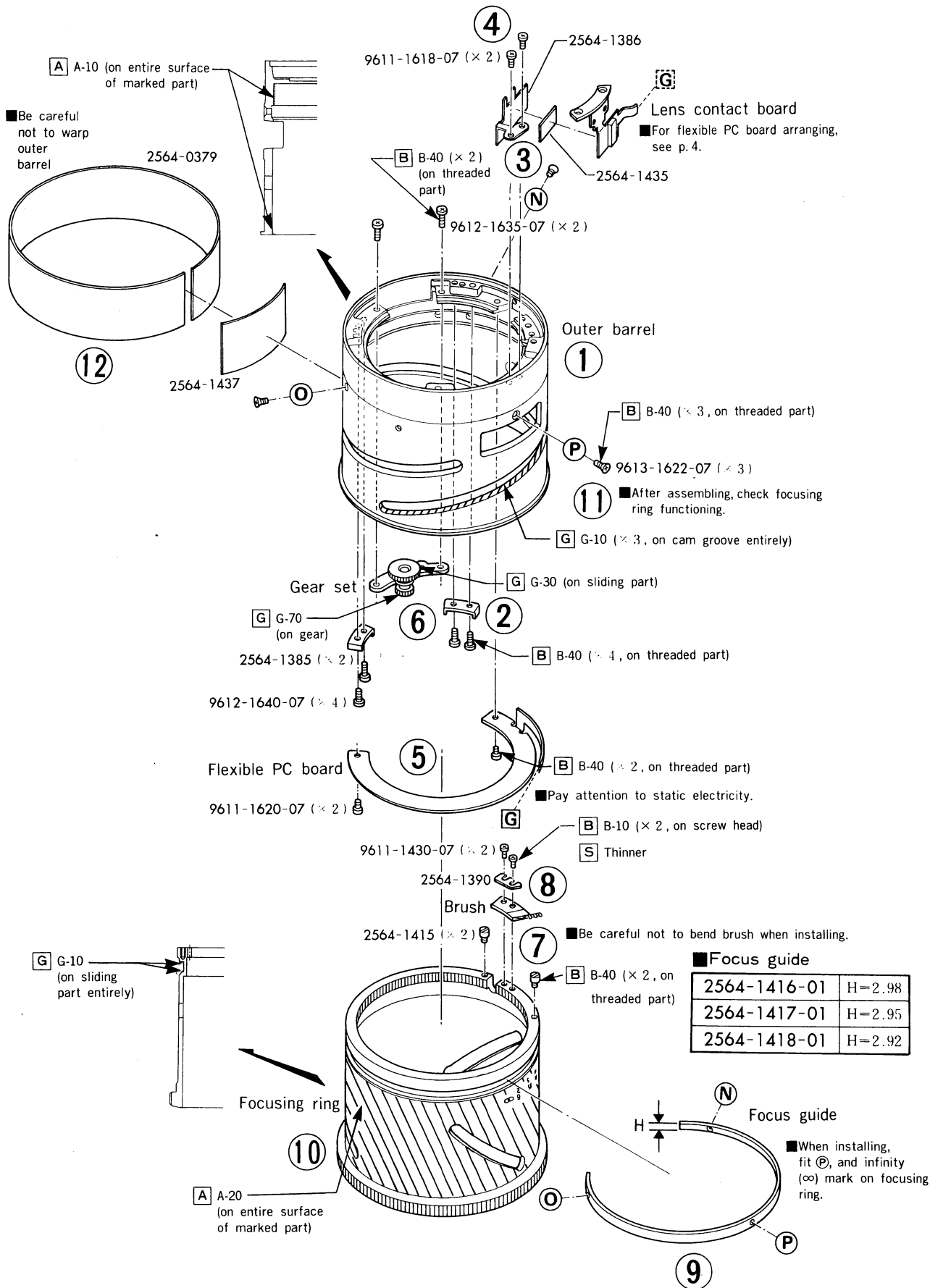
2 Diaphragm blade, Inner barrel, 2nd lens barrel set, Rear lens set, 1st cam barrel

■ Assemble the parts in the order of ①-⑧.

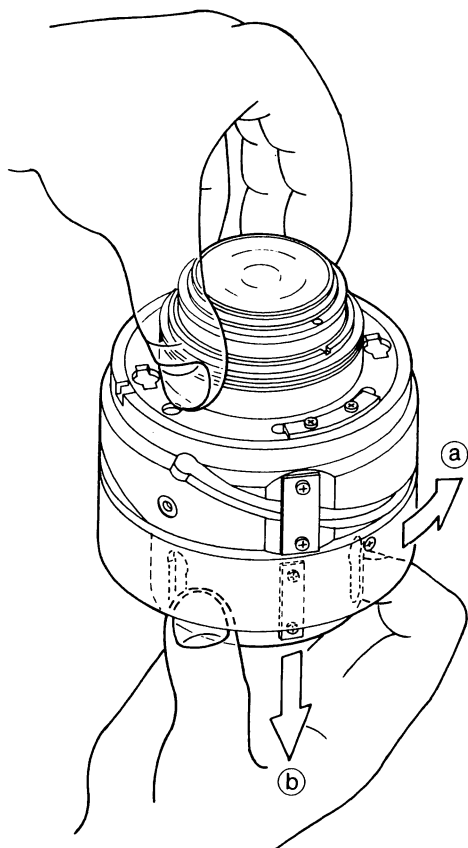


3 Outer barrel, Flexible PC board, Gear set, Brush, Focusing ring

- Assemble the parts in the order of ①–⑫. After assembling, check focusing ring functioning.
■ Solder IC and lens contact board on flexible PC board, beforehand.



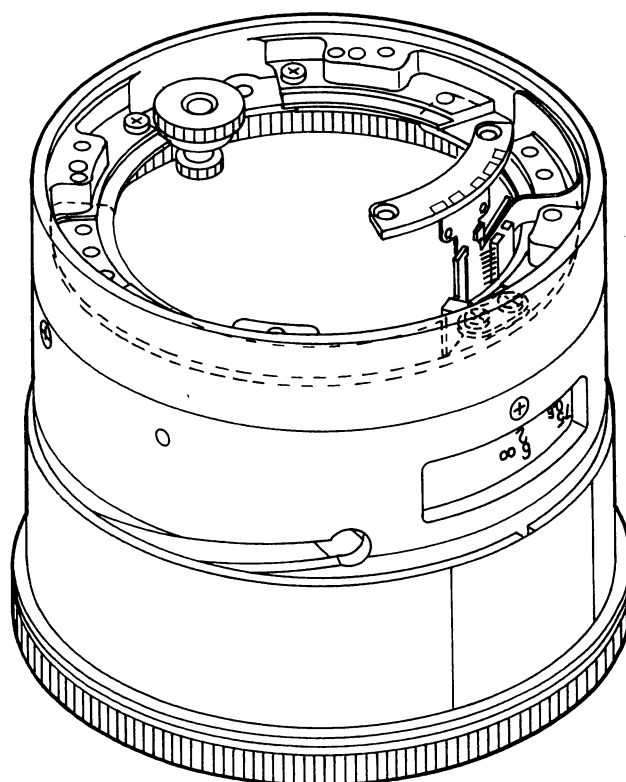
1st cam barrel removing



1. Turn 2nd cam barrel in the reverse direction of arrow (a) to stop position.
(Set inner barrel to minimum distance side.)
2. Slide 1st cam barrel in the direction of arrow (b).
3. Turn 2nd cam barrel slightly in the direction of arrow (a).
4. Slide 1st cam barrel again in the direction of arrow (b).
5. Repeat above 3 and 4 several times and then take off pin of connecting plate from cam groove and remove 1st cam barrel.

Flexible PC board arranging

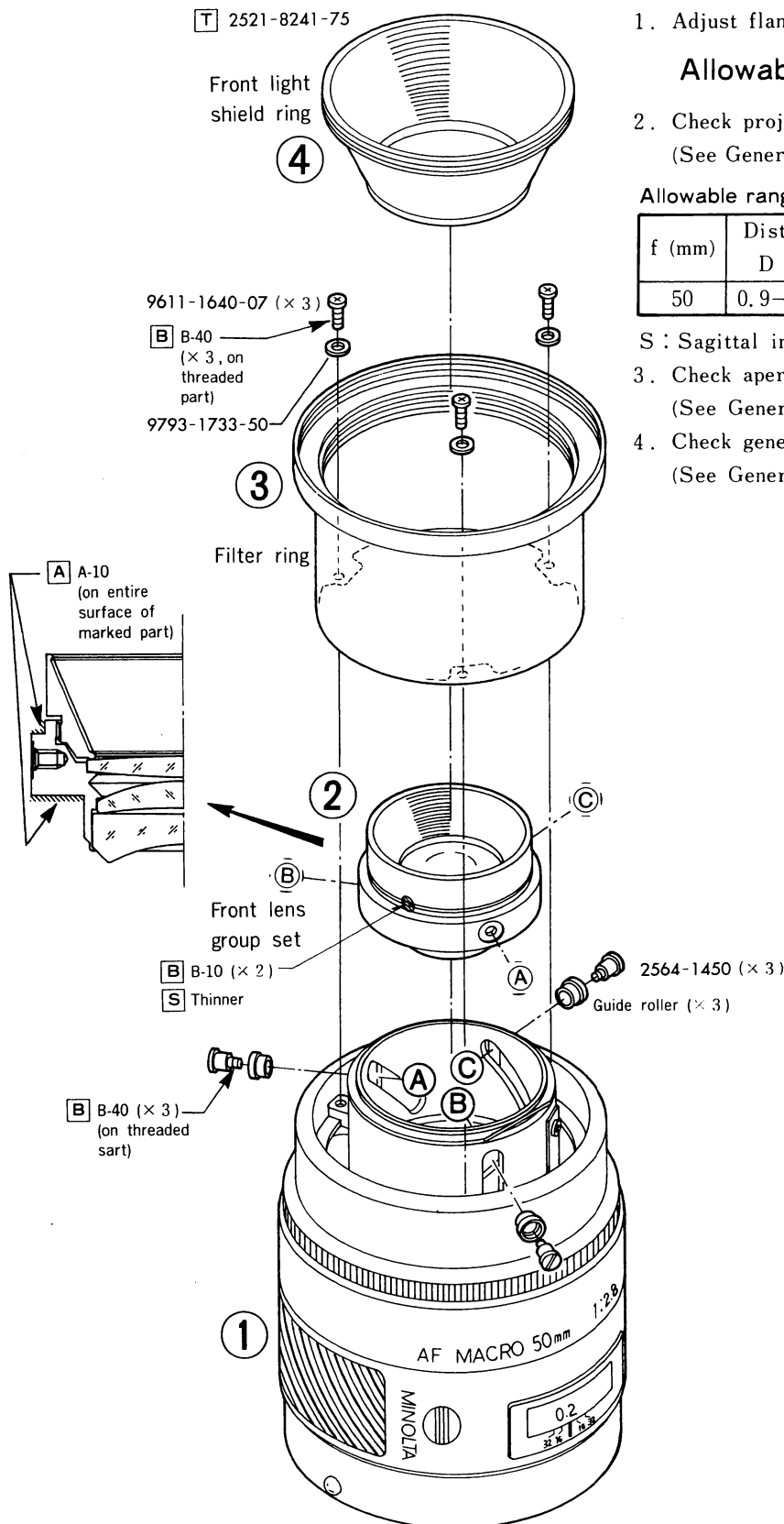
- Arrange flexible PC board as shown below.



Scan Copyright 2006, P.Ganzel

5 Front lens group set, Filter ring, Front light shield ring

■ Assemble the parts in the order of ①-④. After assembling, perform the following checking/adjusting.



1. Adjust flange back. (See p. 7.)

$$\text{Allowable range } (f' F) = 44.57^{+0.03}_0$$

2. Check projection resolving power.

(See General checking/adjusting procedure p. 6.)

Allowable range for Servicing (min.)

f (mm)	Distance D (m)	Center (y' = 0)	y' = 15	
			S	M
50	0.9-2.15	100	40	32

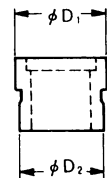
S : Sagittal image M : Meridional image

3. Check aperture diameter.

(See General checking/adjusting procedure p. 9.)

4. Check general function.

(See General checking/adjusting procedure p. 14.)



■ Guide roller

2564-1451-01	$\phi D_1 = 4.53$ $\phi D_2 = 4.03$
2564-1452-01	$\phi D_1 = 4.53$ $\phi D_2 = 4.02$
2564-1453-01	$\phi D_1 = 4.53$ $\phi D_2 = 4.01$
2564-1454-01	$\phi D_1 = 4.52$ $\phi D_2 = 4.03$
2564-1455-01	$\phi D_1 = 4.52$ $\phi D_2 = 4.02$
2564-1456-01	$\phi D_1 = 4.52$ $\phi D_2 = 4.01$
2564-1457-01	$\phi D_1 = 4.51$ $\phi D_2 = 4.03$
2564-1458-01	$\phi D_1 = 4.51$ $\phi D_2 = 4.02$
2564-1459-01	$\phi D_1 = 4.51$ $\phi D_2 = 4.01$

■ Flange back adjusting

■ Measuring instruments : Collimator (Model RC-1000 I *, II *, III)

※Discontinued model

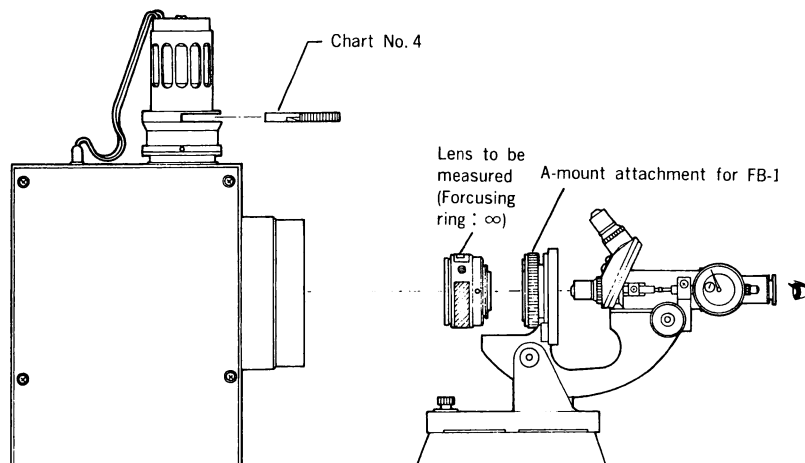
: Flange back checking tester (FB-1)

: A-mount attachment for FB-1

: Flange back gauge (43.50mm)

■ Preparation

- Set lens and measuring instruments as Fig. below.



■ Adjusting procedure

(For preparation of measuring instruments and measurement of flange back, see "Flange back (f'F) measuring, adjusting procedure" of General checking/adjusting procedure on p. 1.)

1. Check if flange back value meets allowable range ($44.57^{+0.03}_0$)

If out of allowable range, calculate correct value.

(Example) Measured flange back value : 44.70

Allowable range : $44.57 \rightarrow 44.60$

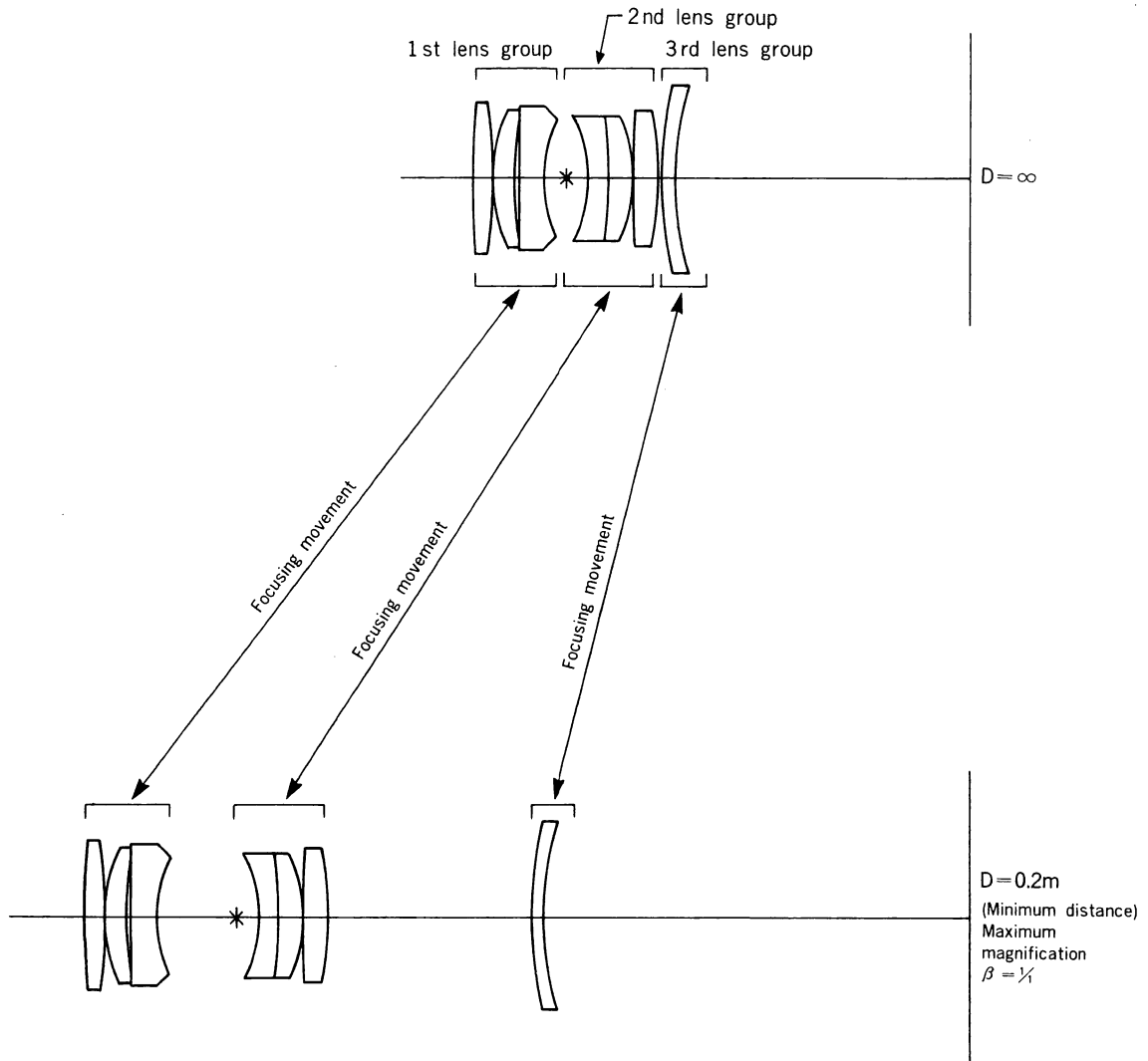
$44.70 - 44.57 = 0.13$ } Increase back washer thickness (0.1 \rightarrow 0.13mm)

$44.70 - 44.60 = 0.10$ } to meet allowable range.

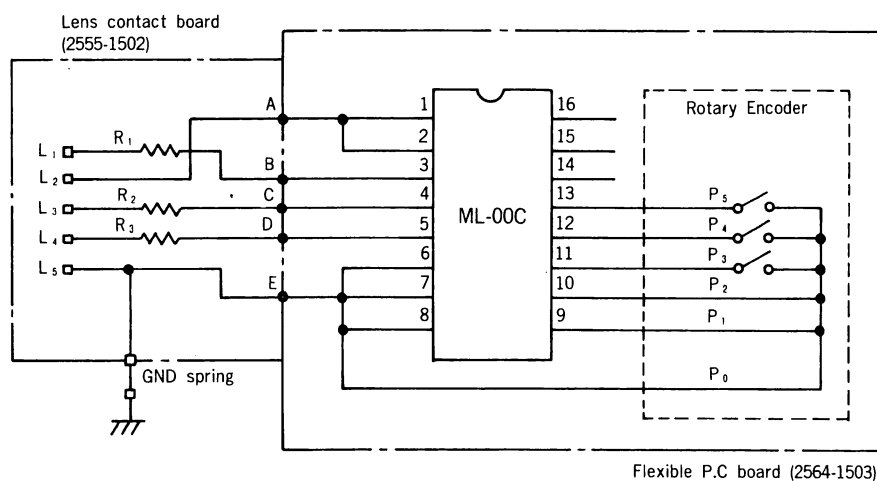
- If measured flange back value is shorter than allowable range...decrease back washer thickness
 - If measured flange back value is longer than allowable range...increase back washer thickness
2. Remove back washer from lens unit.
 3. Measure thickness of original back washer. Then select proper total thickness of back washer. (Classified back washers are given on p. 5.)
 4. After assembling, make sure that flange back meets allowable range. (If out of allowable range, repeat above procedures 1-3.)

Description of focusing

- Modified-Gauss type.
- Double-floating focusing system (1st, 2nd and 3rd lens groups move respectively.)
- Focusing lens group moves by rotating focusing ring or AF coupler.



■ Wiring schematic diagram and printed wiring diagram



L_{1-5} : Lens signal contact
 R_{1-3} : Printed resistor

ML-00C : ROM-IC
A—E : Soldering point
 R_{0-5} : Rotary encoder pattern switch
(ON/OFF at certain zooming point)

